

REMARKS

Reconsideration and allowance of the present application are respectfully requested.

Claims 1-7, 9-22, 24-37, and 39-45 remain pending in the application. Claims 8, 23, and 38 have been cancelled without prejudice or disclaimer. Further, claims 1, 16, and 31 have been amended to include the subject matter previously recited in claims 8, 23, and 38, respectively.

In numbered paragraph 2 on page 2 of the office action, claims 1, 2, 4, 6, 16, 17, 19, 21, 31, 32, 34, and 36 are rejected under 35 U.S.C. §102(b) as anticipated by *Lo et al* (U.S. Patent No. 5, 062,056). Applicant respectfully traverses this rejection. Further, at paragraph 4 on page 5 of the office action, claims 8, 23, and 38 were rejected as being unpatentable over *Lo* in view of *Zwirn et al* (U.S. Patent No. 4,474,343). Because independent claims 1, 16, and 31 have been amended to include the subject matter of dependent claims 8, 23, and 38, respectively, Applicant's arguments with respect to these independent claims will be made in response to the combination of the *Lo* patent and the *Zwirn* patent.

As variously exemplified in Figs. 1a-2, an exemplary embodiment of instant invention can track objects in image data by estimating the position of the moving object. A target tracker identifies the position of an object in a first frame of image data. A data base is maintained to store the positional value of the object in the first frame and any succeeding frames. Stabilization values of the object are also stored in a separate data base for the first frame of data and any succeeding frames. The target tracker then determines whether the object is undetected in a second frame of image data. If the object is undetected the target tracker retrieves the positional values of the object and the stabilization values of the object from their respective databases. The movement of the object is determined to estimate its new position in the second frame of image data by using at least a velocity and acceleration value of the object and a time between the frames of image data. The difference values are then calculated between the frames for each of the positional values and the stabilization values. The stabilization difference values are then

subtracted from the positional difference value for each frame to determine the true movement of the object.

The foregoing features are broadly encompassed by independent claims 1, 16 and 31. Each of claims 1, 16, and 31 recite, among other elements, subtracting stabilization difference values from positional difference values for each frame's image data to generate stabilized positional difference values.

The *Lo* patent discloses an apparatus and method for tracking a target. This target tracking system 5 includes both a correlation tracker 30 and an object tracker 40. The target tracking system transforms an image into a region 212 having a reference image 214, a track gate 216, and cross-hairs 218. The reference image 214, the track gate 216 and cross-hairs 218 are also defined in subsequent images of the object and are used to determine the motion or changes between scenes or images. The Examiner acknowledges that the *Lo* patent fails to disclose or suggest at least subtracting stabilization difference values from positional difference values for each frame of image that it generates stabilize positional difference values, as recited in claim 1. The Examiner relies on the *Zwirn* patent to allegedly remedy this deficiency.

The *Zwirn* patent discloses a guidance system that compensates for the jitter motion of a video tracker. To compensate for and reduce the effect of jitter, the average jitter sample of previous frames is subtracted from the jitter sample of a current frame. The *Zwirn* patent however, does not disclose that the jitter correction value is subtracted from positional difference values of the object. The *Zwirn* patent discloses that the jitter correctional signals are subtracted from missile guidance commands. However, these missile guidance commands are not defined and it is unclear how their value or function should be interpreted.

In summary, the *Lo* patent and the *Zwirn* patent, either singularly or combined, fail to disclose or suggest generating stabilized positional difference values, as recited in independent claims 1, 16, and 31. At best, the combined references teach the calculation of jitter correction

values and the subtraction of these values from guidance commands. Without clear evidence of the value or purposes of these missile guidance commands, any interpretation that the missile guidance commands are analogous to the stabilized positional difference values of claims 1, 16, and 31, can only be attributed to hindsight reasoning. Accordingly, a *prima facie* case of obviousness has not been established.

To establish *prima facie* obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. *In Re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Moreover, obviousness "cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination." *ACS Hospital Systems v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). For at least the above reasons, Applicant respectfully request that the rejection of independent claims 1, 16, and 31 and their various corresponding depending claims, under 35 USC §103, be withdrawn and these claims be allowed.

In numbered paragraph 5 on page 9 of the office action, claims 11-15, 26-30, 41-45 are rejected under 35 U.S.C. §103(a) as unpatentable over the *Lo* patent in view of the *Zwirn* patent and further in view of *Browne* (NPL document). Applicant respectfully traverses this rejection.

Claims 11-15 depend from claim 1, claims 26-30 dependent from claim 16, and claims 41-45 depend from claim 31. By virtue of this dependency, Applicant submits that claims 11-15, 26-30, and 41-45 are allowable for at least the same reasons given above with regard to their respective base claims. In addition, Applicant submits that these claims are further distinguishable over the *Lo* patent, the *Zwirn* patent, and the *Browne* reference by the additional elements cited therein. Still further, the *Browne* reference fails to disclose or suggest at least stabilized positional difference values as recited in independent claims 1, 16, and 31. Thus, the *Browne* reference fails to remedy the deficiencies of the *Lo* patent and the *Zwirn* patent.


Accordingly, Applicant respectfully request that the rejection of claims 11-15, 26-30, and 41-45 under 35 U.S.C. §103 be withdrawn and these claims be allowed.

By the foregoing amendment and remarks, Applicant has addressed all outstanding objections raised in the Final Office Action dated August 11, 2005. For at least this reason, Applicant respectfully submits that the instant application is in condition for allowance and respectfully request the issuance of a Notice of Allowance.

Respectfully submitted,

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